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Remarks

Re-examination and reconsideration of the rejections are hereby requested.

Independent claims 1 and 27 have been amended. In particular, claim 1 has been amended to incorporate the limitation of original claim 7 to state that the correlation shaper is chosen so that a covariance matrix of an output vector of the correlation shaper has the property that the second and subsequent rows are permutations of the first row. Similarly, independent method claim 27 has been amended to incorporate the limitation of claim 31 that shaping the correlation of the vector output further comprises the step of performing a transformation of the vector output such that the covariance matrix of the vector output of the transformation has the property that the second and each subsequent row is a permutation of the first. Claims 8 and 32 have been amended to change the dependency so that they do not depend from canceled claims 7 and 31.

With the present amendments, all of the claims now include the limitations of original claims 7 and 31. These claims stand rejected under 35 U.S.C. § 103a as being unpatentable over Bottomly et al., U.S. Patent No. 6,801,565, in view of Heikkila, U.S. Published Application 2002/0122470. The examiner acknowledges that Bottomly does not disclose shaping the correlation by performing a transformation on the output so that the covariance matrix has the property that the second row is a permutation of the first row. The examiner indicates that Heikkila teaches shaping the output of the demodulator by minimizing the mean square error "that utilizes the rows of a covariance matrix as stated in the abstract."

The claims, as amended herein, now require that the correlation shaper be chosen so that a covariance matrix of an output vector of the correlation shaper has the property that the second and subsequent rows are permutations of the first row. Tellingly, the examiner never asserts that Heikkila teaches such a limitation. The undersigned attorney has carefully reviewed the Heikkila

publication and can find no teaching or suggestion of such a limitation. The examiner has referred only to the abstract and there is no such teaching in the abstract.

Because the references are totally lacking in any teaching or suggestion of such a covariance matrix of an output vector, it is submitted that the pending claims are in condition for allowance and early favorable action is requested.

Respectfully submitted,
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